

Product Brief

Brocade[®] 4×32Gb/s SWL QSFP+

Optimized, Certified Optical Transceivers for the Highest Performance Data-Center Fabrics

Highlights

- Provides high system reliability through a rigorous qualification and certification process.
- Eliminates issues related to transceiver incompatibility, reducing downtime and support costs.
- Provides support for 32Gb/s and 16Gb/s inter-switch links (ISLs), inter-chassis links (ICLs), and device connectivity.

Caution

- Do not look through the optical ports because it is a potential eye hazard.
- The SFP is an ESD sensitivity Class 2 device. It should be handled accordingly.

Ordering Part Numbers

- XBR-000275 (1-pack)
- XBR-000475 (1-pack)

Overview

Today's enterprise data centers are undergoing an infrastructure transformation, requiring higher speeds, greater scalability, and higher levels of performance and reliability to meet the increasing demands of business. As speed and performance needs increase, optical transceivers have become an integral part of overall system design. Brocade transceivers deliver an optimized, highly reliable fabric.

The Brocade[®] 4×32Gb/s Short Wavelength (SWL) Quad Small Form-Factor Pluggable (QSFP+) transceivers, part of the Brocade family of optical transceivers, are optimized for Brocade switches. These optical transceivers provide state-of-the-art performance, helping IT organizations achieve new levels of infrastructure consolidation while expanding the capabilities of their applications and services.

The Brocade 4×32Gb/s SWL QSFP+ modules are hot-swappable, low-voltage (3.3V) digital diagnostic optical transceivers that support high-speed serial links over multimode optical fiber at signaling rates up to 4×28.05Gb/s. They comply with the 128GFC Fibre Channel standard (FC-PI-6P) and QSFP MSA mechanical specification (SFF-8661).

Product highlights include the following:

- 850-nm multimode VCSEL transmitter
- Diagnostic features per SFF-8472 (*Diagnostic Monitoring Interface for Optical Transceivers*), providing real-time monitoring of:
 - Transmitted optical power
 - Received optical power
 - Laser bias current
 - Temperature
 - Supply voltage
- Industry-standard MPO 1×12 ribbon cable connector
- 100m link length on OM4, OM4+, and OM5 fiber; 70m link length on OM3 fiber (these distances assume 1.0-dBm connector loss)
- Support for breakout to 4×32Gb/s SWL connectivity
- IEC 60825-1 Class 1/CDRH Class 1 laser, eye-safe
- Compliance with the Restriction on Hazardous Substances (RoHS) directive

End-to-End Compatibility and Reliability

The Brocade 4x32Gb/s SWL QSFP+ modules support highly reliable operations in data-center fabrics and are optimized for Brocade switching platforms. They undergo rigorous qualification and certification testing that results in an end-to-end solution that is easier to maintain—helping to improve the availability of data-center fabrics that support mission-critical applications.

Family of Optical Transceivers

Brocade offers a comprehensive family of reliable optical transceivers to provide highly compatible, high-performance connectivity to Brocade director and switch products. For additional ordering information, contact a Brocade representative or visit www.broadcom.com/support/fibre-channel-networking.

Brocade 4x32Gb/s SWL QSFP+ Specifications

System	
Performance	Fibre Channel: <ul style="list-style-type: none"> • 112.2Gb/s (4x28.05Gb/s) line speed, full duplex • 56.1Gb/s (4x14.025Gb/s) line speed, full duplex
Media	Hot-pluggable, industry-standard QSFP28, MPO 1x12 ribbon cable connector, Short Wavelength (SWL)
Operating Parameters	Transmit (Tx): <ul style="list-style-type: none"> • Wavelength: 840 nm to 860 nm • Spectral width: 0.60 nm • Average power: -8.5 dBm to +2.4 dBm per channel • Optical return loss: -12 dB max • OMA: -6.5 dBm to +3.0 dBm per channel Receive (Rx): <ul style="list-style-type: none"> • Wavelength: 840 nm to 860 nm • Average power: -10.4 dBm to 2.4 dBm per channel • Optical return loss: -12 dB min • SRS OMA: -4.7 dBm max per channel
Operating Distances	100m on OM4, OM4+, and OM5 multimode fiber; 70m on OM3 multimode fiber. These distances assume 1.0-dBm connector loss.
Mechanical	
Size	Width: 18.35 mm (0.72 in.) Height: 12.9 mm (0.51 in.) Depth: 71.00 mm (2.82 in.)
Environmental	
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Power	
Power Dissipation	2.5W
Regulatory and Standards Compliance	
North America	UL/CSA 60950, CDRH Class 1
European Union	EN 60950, EN 60825 Class 1

For information about supported SAN standards, visit www.broadcom.com/sanstandards.

For information about switch and device interoperability, see the [Brocade Transceiver Support Matrix](#).

For information related to SFF Committee documentation, visit www.snia.org/sff.